

REMARKS

This is a Response to the Office Action mailed July 25, 2006, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire October 25, 2006. Nine (9) claims, including three (3) independent claims, were paid for in the application. Claims 4, 5, 6, and 9 were canceled by the Applicants in their January 19, 2006, Request for Continued Examination. Claim 8 was canceled by the Applicants in their April 17, 2006, response to the Office Action of February 22, 2006. Claims 1-3, 7, and 10-11 are currently amended. New claims 12-14 have been added. No new matter has been added to the application. No fee for additional claims is due by way of this Amendment. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 1-3, 7, and 10-14 remain pending.

1. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, claims 1-3, 7, and 10-11 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over *Ahn et al.* (U.S. Patent 6,346,367), hereinafter *Ahn*, in view of *Mizuno* (U.S. Patent 6,421,307), hereinafter *Mizuno*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

a. Independent Claims 1 and 11

Applicants respectfully submit that claims 1 and 11 are allowable for at least the reason that the proposed combination of *Ahn* in view of *Mizuno* does not disclose, teach, or suggest the features of independent claims 1 and 11 for at least the following reasons.

First, the proposed combination of *Ahn* in view of *Mizuno* does not disclose, teach, or suggest at least the features of “intermittently projecting a first laser beam for forming

a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam” as recited in claims 1 and 11 (emphasis added). That is, the first and second laser beams are intermittently projected.

Ahn does not disclose, teach, or suggest intermittently projecting a first laser beam and a second laser beam. *Ahn* discloses a system where two laser beams LB1 and LB2 are projected onto the photoresist-coated glass board (column 3, lines 20-30, and Figure 5B) such that the projection 122 is formed. That is, in *Ahn*, both beams LB1 and LB2 must be concurrently projected if the projection 122 is to be formed on a photoresist-coated glass board. Thus, *Ahn* fails to disclose, teach, or suggest every element of the Applicants’ claimed invention.

Mizuno also fails to disclose, teach, or suggest intermittently projecting a first laser beam and a second laser beam. The disclosed *Mizuno* laser beams are concurrently projected. Thus, *Mizuno* fails to disclose the missing elements from *Ahn* that are part of the Applicants’ claimed invention.

Even if the *Ahn* system is modified by the *Mizuno* optical disk reading system, the above-recited features of claims 1 and 11 would not be disclosed, taught, or suggested. Accordingly, the proposed combination of *Ahn* in view of *Mizuno* does not teach at least the claimed limitations of “intermittently projecting a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam” as recited in claims 1 and 11. Therefore, a *prima facie* case establishing an obviousness rejection by *Ahn* in view of *Mizuno* has not been made. Thus, claims 1 and 11 are not obvious under proposed combination of *Ahn* in view of *Mizuno*. Accordingly, the rejection should be withdrawn for at least this reason alone.

Second, the proposed combination of *Ahn* in view of *Mizuno* does not disclose, teach, or suggest at least the features of “intermittently projecting a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam” as recited in claims 1 and 11 (emphasis added). As noted above, the first and second laser beams are

intermittently projected, and when the second laser beam is projected, the first laser beam is blocked.

Ahn does not disclose that the second laser beam is projected while blocking the first laser beam. As noted above, *Ahn* discloses a system where two laser beams LB1 and LB2 are projected onto the photoresist-coated glass board (column 3, lines 20-30, and Figure 5B) such that the projection 122 is formed. That is, in *Ahn*, both beams LB1 and LB2 must be concurrently projected if the projection 122 is to be formed on a photoresist-coated glass board. Therefore, if *Ahn* is modified to intermittently project LB1 and LB2 such that LB1 is blocked while LB2 is projected, the projection 122 would not be formed. Thus, *Ahn* fails to disclose, teach, or suggest every element of the Applicants' claimed invention.

Mizuno does not disclose, teach, or suggest projecting that the second laser beam is projected while blocking the first laser beam. As noted above, *Mizuno* discloses an "optical device for use in receiving and detecting a returned light reflected from an irradiated portion by irradiating a light from a light-emitting portion, for example, on the irradiated portion of an optical recording medium such as an optical disk, a phase-change type optical disk and so on" (column 1, lines 6-10, and Figures 1 and 2B). *Mizuno* further discloses a "confocal knife edge arrangement (hereinafter referred to as CKE arrangement), as shown in FIGS. 11A and 11B, although the returned light L_R is split in the right and left directions by the knife edge KE formed of a pyramid mask located at the confocal position, it is clear from FIGS. 12 and 13 that the changes of the patterns relative to the detracks on the respective separated sides (hereinafter referred to as channels) approximately conform to the changes of the patterns of the prior-art type (structure without knife edge based on the semiconductor structure of triangular pyramid shape; the landing position of each diffracted light is seen in FIG. 20) shown in FIG. 21" (column 10, lines 19-30, emphasis added). Accordingly, at most, the returned light is split in the *Mizuno* optical disk reader system. That is, the *Mizuno* system could not operate as an optical disk reader if a second laser beam is projected while blocking the first laser beam. Therefore, *Mizuno* clearly fails to disclose "intermittently projecting a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam" as recited in claims 1

and 11. Thus, *Mizuno* fails to disclose the missing elements from *Ahn* that are part of the Applicants' claimed invention.

Accordingly, the proposed combination of *Ahn* in view of *Mizuno* does not teach at least the claimed limitations of "intermittently projecting a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam" as recited in claims 1 and 11. Therefore, a *prima facie* case establishing an obviousness rejection by *Ahn* in view of *Mizuno* has not been made. Thus, claims 1 and 11 are not obvious under proposed combination of *Ahn* in view of *Mizuno*. Accordingly, the rejection should be withdrawn for at least this reason alone.

However, *Mizuno* does disclose a three-beam method wherein "the diffraction grating separates a light to provide a main beam and two sub-beams on both sides of the main beam. FIG. 5 shows positions of spots formed on the disk surface according to the three-beam method" (column 2, lines 55-59). Even if *Ahn* is modified by the three-beam system disclosed in *Mizuno*, the three beams generated by the diffraction grating would not be "intermittently projecting a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently projecting a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam onto the photoresist-coated glass board so that a spot of the first laser beam is located on the inner circumference side of the photoresist-coated glass board and a spot of the second laser beam is located on the outer circumference side thereof" as recited in claims 1 and 11. Therefore, a *prima facie* case establishing an obviousness rejection by *Ahn* in view of *Mizuno* would not been made using the three-beam method. Thus, claims 1 and 11 are not obvious under proposed combination of *Ahn* in view of *Mizuno*. Accordingly, the rejection should be withdrawn for at least this reason alone.

Third, *Mizuno* is used as the secondary reference in the 35 U.S.C. §103(a) rejection of independent claims 1 and 11 (and dependent claims 2-3, 7, and 10). However, Applicants respectfully assert that *Mizuno* is not a reference that may properly be used in a 35 U.S.C. §103(a) rejection against the Applicants' invention because there is no motivation to combine *Ahn* and *Mizuno* as proposed in the Office Action. There is no motivation to combine

because *Mizuno* teaches away from a system configured for “forming a groove onto the photoresist-coated glass board and ... for forming land pre-pits.” Cited art may not be used for an obviousness type rejection when the cited art diverges or teaches away from the claims of the present invention. [See e.g., *W.L. Gore & Assocs. V. Garlock, Inc.*, 699 F.2d 1331, 1333, 216 U.S.P.Q.1038, 1040 (Fed. Cir. 1983).]

Mizuno teaches away from the novelty of the present invention because *Mizuno* discloses an “optical device for use in receiving and detecting a returned light reflected from an irradiated portion by irradiating a light from a light-emitting portion, for example, on the irradiated portion of an optical recording medium such as an optical disk, a phase-change type optical disk and so on” (column 1, lines 6-10, and Figures 1 and 2B). Thus, the *Mizuno* laser irradiation system is understood to provide for reading optical disk media that already has information recorded thereon. The *Mizuno* laser beams projected onto the disk media do not have sufficient power to form grooves and land pre-pits onto the photoresist-coated glass board. If the *Mizuno* laser beams projected onto the optical disk media had sufficient power to form grooves and land pre-pits, the information residing on the optical disk media would be destroyed. In other words, one skilled in the art looking to solve the problems addressed by the present invention (forming grooves and land pre-pits onto a photoresist-coated glass board) would not look to a device limited to reading an optical disk media and that is not operable to form grooves and land pre-pits on a photoresist-coated glass board. Accordingly, since the intended purpose of the *Mizuno* system (reading an optical disk media) would be defeated if used for forming grooves and land pre-pits, one skilled in the art would recognize that *Mizuno* teaches away from the Applicants’ method for forming grooves and land pre-pits onto a photoresist-coated glass board.

Given that *Mizuno* teaches away from the Applicants’ present invention, as defined by at least claims 1 and 11, there is no motivation to combine *Ahn* and *Mizuno* as proposed in the Office Action. Accordingly, *Mizuno* cannot be used as a reference to properly establish a 35 U.S.C. §103(a) rejection. Accordingly, the rejection of at least claims 1 and 11 should be withdrawn for this reason alone.

Fourth, in an alternative scenario, *arguendo*, assuming that the apparatus of *Ahn* might be modified by *Mizuno* such that the *Ahn* apparatus would be operable to intermittently project a first laser beam for forming a groove onto the photoresist-coated glass board and intermittently project a second laser beam for forming land pre-pits in synchronism with blocking the first laser beam onto the photoresist-coated glass board, the principle of operation of the modified *Ahn* apparatus would be changed. *Ahn* expressly teaches that “an optical disk 10 according to an embodiment of the present invention includes information pits 12 recessed from a reference surface 11 by a predetermined depth, and a **projection 122** is formed in a respective information pit 12. The projection 122 projects with respect to a bottom surface 121 of the information pit 12. The projection 122 rises to a height which is lower than the reference surface 11, and **divides the information pit 12 into two u-shaped cross-sections**” (column 2, lines 49-59). That is, *Ahn* (before modification by *Mizuno*) is forming the projection 122 which divides the information pit into two u-shaped cross-sections. If modified as proposed by the Office Action to intermittently form a groove with the first laser beam and land pre-pits with the second laser beam (while the first beam is blocked), the principle of operation of *Ahn* would be changed since *Ahn* would no longer be forming the requisite projection 122.

Applicants respectfully refer the Examiner to MPEP §2143.02, entitled “THE PROPOSED MODIFICATIONS CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE.” The MPEP states that “if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.”

Because the principle of operation of *Ahn* after modification by *Mizuno* would be changed, a *prima facie* of obviousness cannot be established under the above-described scenario wherein *Ahn* is modified by *Mizuno*. Accordingly, the rejection of at least claims 1 and 11 under 35 U.S.C. §103(a) must be withdrawn.

b. Claims 2, 3, 7, and 10

With respect to claim 2, the proposed combination of *Ahn* in view of *Mizuno* does not disclose, teach, or suggest at least the features of “blocking the second laser beam so as to

prevent portions of the exposed region from being aligned with each other in the radial direction of the photoresist-coated glass board if at least an adjacent portion of the exposed region in the radial direction has been formed by irradiation with the second laser beam” as recited in claim 2. As noted in the Office Action at page 2, *Ahn* “does not teach the use of a blocking mechanism.” *Mizuno* does not disclose the above-recited features of claim 2 because it is an optical disc reader. Accordingly, the proposed combination of *Ahn* in view of *Mizuno* does not teach at least the above-recited limitation of claim 2. Therefore, a *prima facie* case establishing an obviousness rejection by *Ahn* in view of *Mizuno* has not been made. Thus, claim 2 is not obvious under proposed combination of *Ahn* in view of *Mizuno*. Accordingly, the rejection should be withdrawn for at least this reason alone.

With respect to claim 7, the proposed combination of *Ahn* in view of *Mizuno* does not disclose, teach, or suggest at least that “the second laser beam is projected onto the photoresist-coated glass board within the period that the first laser beam is blocked” as recited in claim 1. As noted above, *Ahn* discloses a system where two laser beams LB1 and LB2 are projected onto the photoresist-coated glass board (column 3, lines 20-30, and Figure 5B) such that the projection 122 is formed. That is, in *Ahn*, both beams LB1 and LB2 must be concurrently projected if the projection 122 is to be formed on a photoresist-coated glass board. Therefore, if *Ahn* is modified such that the second laser beam LB2 is projected onto the photoresist-coated glass board within the period that the first laser beam LB1 is blocked, the projection 122 would not be formed. *Mizuno* does not disclose the above-recited features of claim 7 because it is an optical disc reader. Accordingly, the proposed combination of *Ahn* in view of *Mizuno* does not teach at least the above recited limitation of claim 7. Therefore, a *prima facie* case establishing an obviousness rejection by *Ahn* in view of *Mizuno* has not been made. Thus, claim 7 is not obvious under proposed combination of *Ahn* in view of *Mizuno*. Accordingly, the rejection should be withdrawn for at least this reason alone.

Because independent claim 1 is allowable over the cited art of record, dependent claims 3 and 10 (which depend from independent claim 1) are allowable as a matter of law for at least the reason that the dependent claims 3 and 10 contain all elements of independent claim 1.

See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn.

2. New Claims


New claims 12-14 are based on subject matter that is explicit and/or inherent within the description of the specification and/or the drawings. Applicants submit that no new matter has been added in the new claims 12-14, and that new claims 12-14 are allowable over the cited prior art. Therefore, Applicants request the Examiner to enter and allow the above new claims.

3. Conclusion

In light of the above remarks, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that all pending claims 1-3, 7, 10-14 are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Armentrout by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is further encouraged to contact Mr. Armentrout by telephone to expediently correct such informalities.

Respectfully submitted,

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